

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

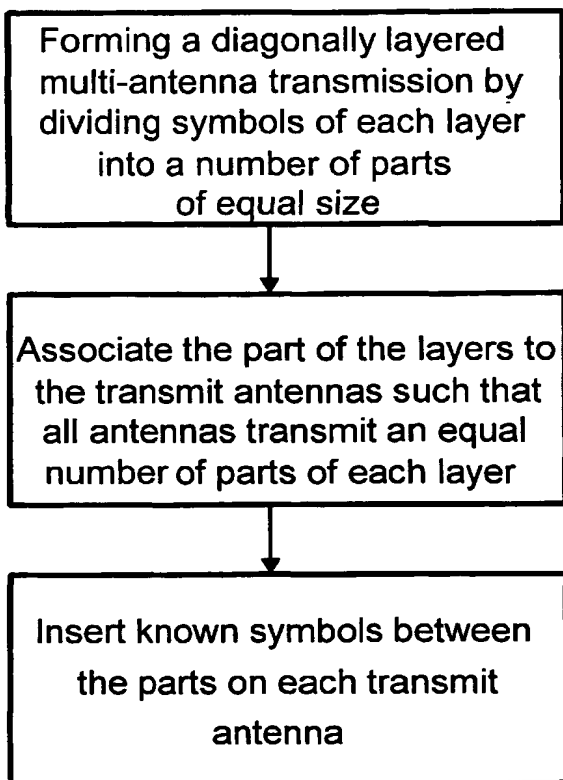
(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
23 October 2003 (23.10.2003)

PCT

(10) International Publication Number
WO 03/088552 A1

- (51) International Patent Classification⁷: **H04L 1/06**
- (21) International Application Number: **PCT/SE03/00458**
- (22) International Filing Date: **19 March 2003 (19.03.2003)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data:
0201103-9 11 April 2002 (11.04.2002) **SE**
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- (81) Designated States (national): **AE, AG, AL, AM, AT** (utility model), **AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ** (utility model), **CZ, DE** (utility model), **DE, DK** (utility model), **DK, DM, DZ, EC, EE** (utility model), **EE, ES, FI** (utility model), **FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK** (utility model), **SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.**
- (84) Designated States (regional): **ARIPO** patent (**GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW**), **Eurasian** patent (**AM, AZ, BY, KG, KZ, MD, RU, TJ, TM**), **European** patent (**AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR**), **OAPI** patent (**BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG**).
- Published:**
— with international search report

[Continued on next page]

(54) Title: **DIAGONALLY LAYERED MULTI-ANTENNA TRANSMISSION FOR FREQUENCY SELECTIVE CHANNELS**

(57) **Abstract:** A method and a system are disclosed for avoiding inter-layer inter-symbol interference. Diagonally layered multi-antenna transmissions are utilised by the proposed method and system. Known symbols are inserted at the borders between different layers to avoid inter-layer inter-symbol interference. The system relies on an improved method to transmit multiple data-streams (layers). The invention describes a method for transmitting data-streams over multiple antennas in an effective and smart way when having frequency selective channels. By utilising a system using the present method problems with inter-layer inter-symbol interference between different data-streams can be avoided when changing transmit antenna for the data-streams. The invention utilises that a diagonal layered multi-antenna transmission will not create inter-symbol interference, ISI, between different layers.